

Commodity Impact Factor

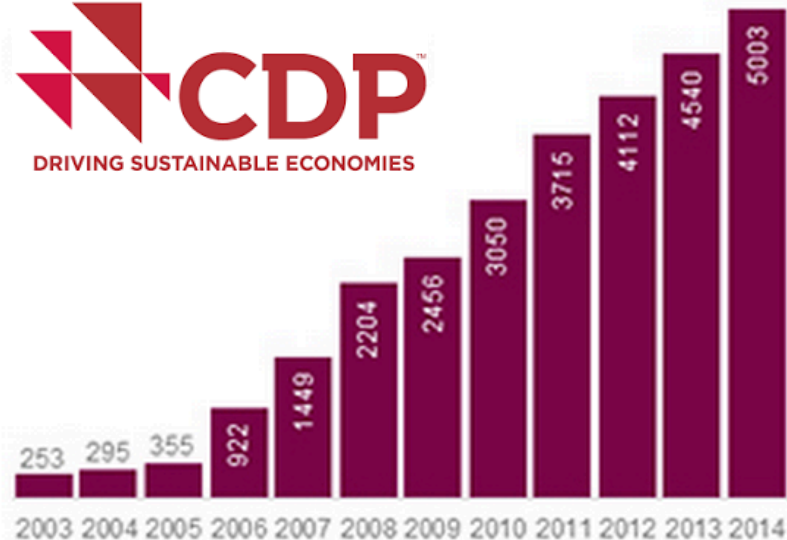
Commodity Markets: An untapped Solution in a Resource Constrained World

Global Solution Networks (GSN) Webinar April 21, 2016



Joe Madden, CEO, EOS Climate

Capital markets are driving climate action



Number of companies reporting annually to CDP

- CDP provides 822 institutional investors representing > US\$95 trillion in assets with carbon risk information
- >5,000 companies voluntarily report GHG data through CDP
- Stranded assets associated with fossil fuel holdings “awakened” markets to carbon risk
- Divestment + new low GHG financial products signal movement of financial capital away from carbon

Action previously driven by regulators is also being driven by **investors**

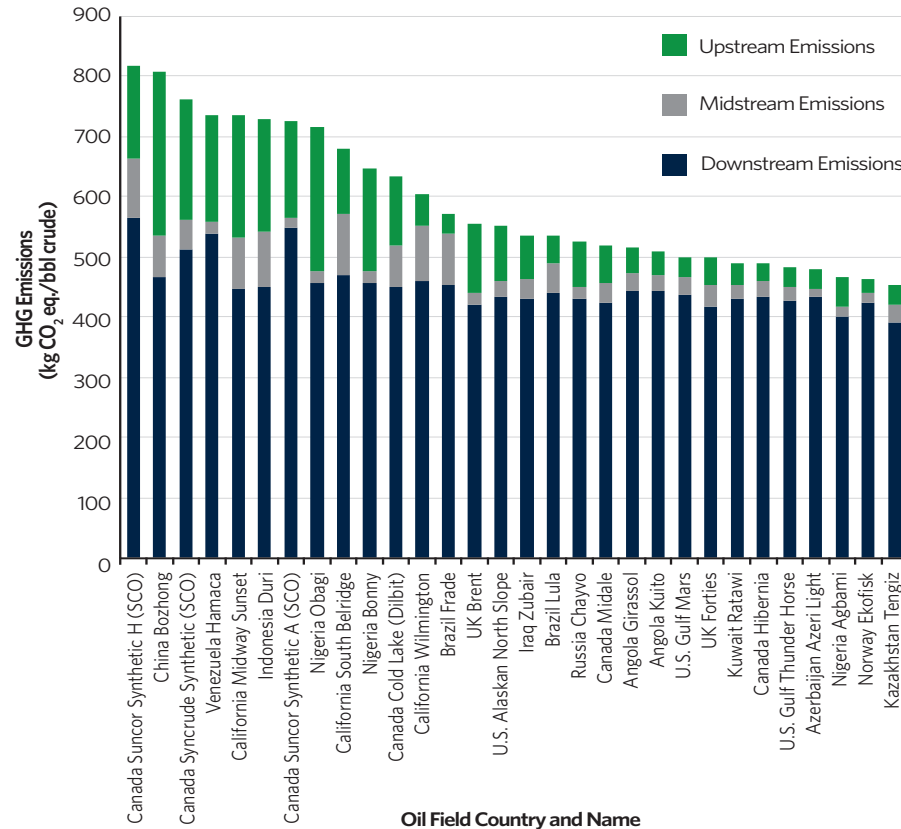
Capital markets differ from compliance markets

Characteristic	Existing Capital Markets	Existing Regulatory Markets
Reach	Global	Regional
Driver	Apolitical	Political
Time	Future: What will happen?	Past: What did happen?
Measurement	Comparative: Better or Worse?	Comply: Yes or No?
Modality	Dynamic: No set target and market forces drive efficiency	Pre-determined: Targets set years in advance

Legal definitions have a significant role to play in facilitating the inclusion of carbon risk in capital markets

Raw material inputs = unique opportunity

Total GHG Emissions for 30 Phase 1 OCI Test Oils¹



~80% Variance in aggregate GHG impact between highest and lowest

All commodities are not created equal

- Multiple commodity origins feed a global market
- Markets will differentiate (via price signal) where information is available & credible
- Circular inputs (generally) have lower impact

Source: authors' calculations

Note: Unlike the other OCI test oils, Cold Lake dilbit is not comprised of a full barrel of oil. It is about 75 percent bitumen mixed with diluent to allow it to flow.

¹Reprinted by permission of the publisher from *Know Your oil: Creating a Global Oil-Climate Index*, by Deborah Gordon, Adam Brandt, Joule Bergerson, and Jonathan Koomey (Washington, DC; Carnegie Endowment for International Peace, 2015) pp36. www.CarnegieEndowment.org

INTEGRITY is the road & **SCALE** is the destination

Information integrity & transferability at scale is critical for inclusion of environmental metrics in global markets

- Standards & Legal definitions must be:
 - Globally accepted
 - Applied programmatically
 - Simultaneously foundational & dynamic



New tools enable transformation

Mobile Technology

- GPS & remote tracking
- Real-time information feeds

Blockchain

- Global, transparent & secure registry for environmental metrics
- Reduced transaction fees, quicker settlement, mobile payment

Big Data Analytics

- Large, secondary data sets (i.e. satellite imagery) can verify primary data

Global Solution Networks

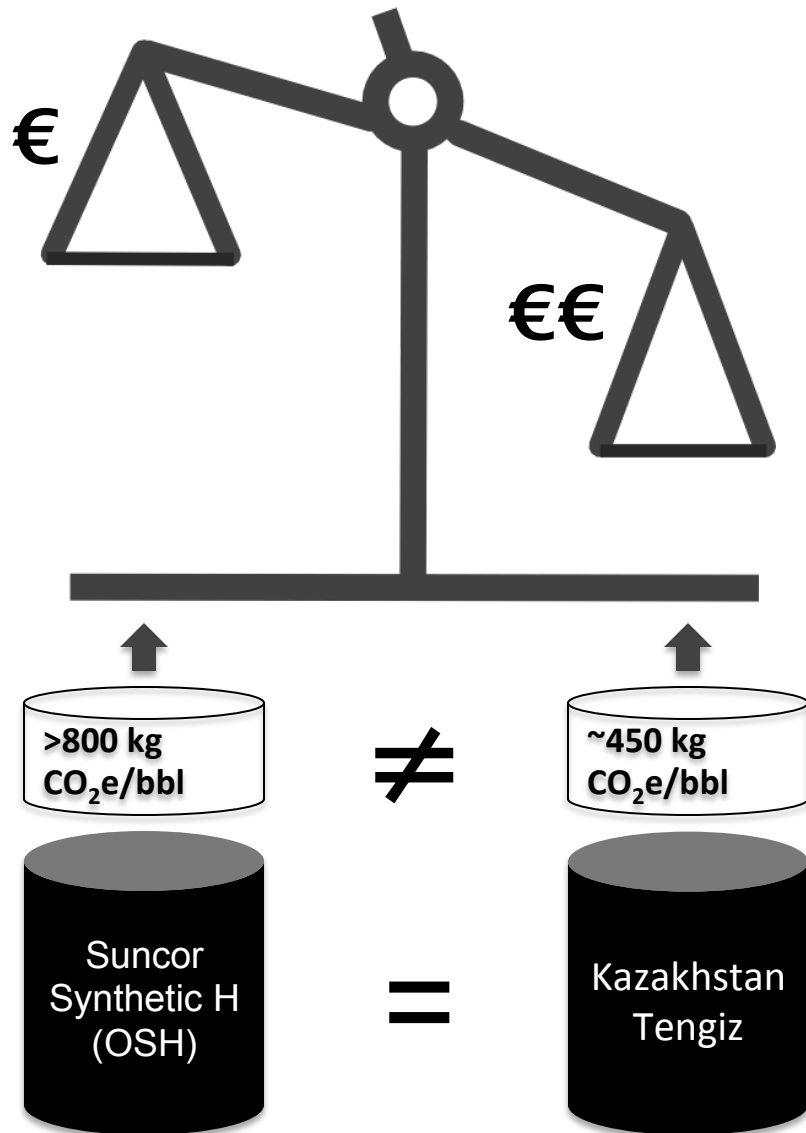
- Online collaboration tools and networks



Integrating environmental metrics and commodity markets

1. CIF System leverages several types of GSNs, e.g.:
 - Operational & Delivery
 - Knowledge
 - Standards
 - Platforms
2. Apply standards through a robust, pre-qualification process for market producers to determine specific impacts
3. Utilize secondary data sets according to stipulated verification processes to confirm integrity of data associated with production
4. Place environmental data into blockchain format, creating a transparent, secure and global “registry” for environmental metrics accessible to commodity market participants
5. Let market forces work

Global markets react to information via price signals



- In a resource constrained world where resource intensity equates to financial risk, markets will value carbon efficiency
- The principle is particularly relevant for raw material inputs with multiple points of origin flowing into the global market
- Standards, Legal and Operational definitions are critical components in harnessing the power of the markets to curb GHG emissions

Standards & Legal definitions for intangible attributes will quickly become the new frontier

The concept of integrating intangible attributes within existing global markets creates new challenges:

- How will standards & legal definitions be established, applied and transferred across owners and/or geographic jurisdictions over time?
- How can buyers of low carbon attributes be assured of the validity of their products?
- How will intangible attributes be incorporated into international treaties?

CIF is a “Heavy Lift” & Global Solution Networks provide a Key Component in the overall solution

Harnessing the power of the global market economy to address the challenges of climate change, water scarcity and equitable human rights is a daunting task.

Mobilizing multi-stakeholder communities with the intention of creating the standards and legal definitions necessary to integrate “intangible impacts” into existing global market mechanisms requires mass collaboration within an established & trusted framework.

GSN is leading the way.

Thank You.

For more information on integrating and pricing externalities in existing global markets, please visit:

www.cifsystem.com